



MOBOTIX

CASE STUDY

Network Video: Ideal For Reliable Production Process Monitoring

Billion Euro Investment

There will always be paper. Despite the digital, or so-called "paperless" age, the paper industry is still booming in Germany. This means that bleached long-fiber cellulose, which is used to produce fine and printing paper as well

as high-quality sanitary paper, also remains very much in demand. The high demand induced Mercer International Inc., an American-Canadian pulp and paper manufacturing company, to set up a new cellulose

plant in the north of the German state of Saxony-Anhalt. Naturally, the good infrastructure and the favorable location in Central Europe were also important prerequisites to warrant an investment of a total of one billion euros. In addition, some 580 new jobs were created, making the modern plant, which started its production in the summer of 2004, the largest employer in the region.

On business premises close to 200 acres in size, Zellstoff Stendal GmbH processes about two million solid cubic meters of log wood and one million solid cubic meters of wood chips to obtain 570,000 tons of cellulose each

year. The log wood is debarked in the direction of the fiber, chopped up and cooked using heat and chemicals in a pulping process. The resulting pulp is then washed, sorted, bleached, drained, dried and shaped. In the so-called leaching line, the chemicals used are recovered and returned back into the production process.

Sustainable And Environmentally Friendly

The entire production process is sustainable and environmentally friendly. In Germany, for example, more wood grows than is harvested. The extraction liquid and the sludge that are produced during the CO₂-neutral burning of the scrap wood, cover not only the plant's relatively high energy consumption (55 MW), but they also feed another 35 MW into the public power network.

To reliably monitor the cellulose production process, Zellstoff Stendal GmbH uses a total of 58 MOBOTIX cameras.



Security Vision Systems





MOBOTIX cameras make it possible to monitor the production of cellulose bales without having to employ additional staff (photos on the bottom right: original images from the MOBOTIX cameras).



Robust, Reliable, Flexible And Versatile

Too Dangerous

“Many areas in the production plant are too loud, too warm or too dangerous for our employees. But production in these areas still has to be carefully monitored,” said Kay Heppner, system manager at Zellstoff Stendal GmbH, explaining the reason for the relatively large number of surveillance cameras in operation. That is why the Magdeburg branch of Siemens AG

(www.siemens.de > Standorte > Magdeburg) was already commissioned to prepare a comprehensive communications concept for a data network during the project planning phase. The concept was to be designed not only to accommodate ‘data’ and ‘voice/telephony’ services, but also for the transmission of images, which would then be directly displayed in the production control rooms.

Analog, Too Complicated?

“We need these images live and in good quality to guarantee optimum monitoring,” continued Heppner.

“After all, without a properly functioning camera system, we would not be able to run the production lines. A camera malfunction would automatically mean production downtime at our plant.”

Providing good-quality images live used to be a task that was generally performed by analog video technology. “But that would have meant an awful lot of complicated wiring,” said graduate engineer Axel Borchers with a frown. As the network expert at Siemens AG in Magdeburg, Borchers was in charge of preparing the communications concept and supervising the project. “For the digital ‘data’ and ‘voice’ services, we had planned to use a fiberglass/copper network to connect all 25 buildings on the extensive premises. To provide analog video technology, we would have also had the complicated task of laying another cable along with installing the cross bars required and the corresponding monitors.” This was enough reason to start thinking about whether or not there was an IP camera that had a frame rate able to do the job and that could easily be hooked up to the already-planned digital network.

“In the past, we had already had very good experience with the network cameras from MOBOTIX. The tests we



then performed indicated that these cameras offered the image quality we needed, thus meeting all the necessary requirements. That's why we recommended this technology in our communications concept," commented Borchers.

"The Best System!"

"Of course, at the same time, we looked at a number of different systems and discovered that, in terms of quality and expansion options, MOBOTIX offered the best system overall," added Heppner. "The camera does not have any mechanical parts and it is extremely robust. In addition, it has no problems with fluctuations in temperature and is able to deal easily with different degrees of brightness as well as backlight. In short: many of the details and features it is equipped with are also things that we urgently needed to monitor our production processes."

At Every Location

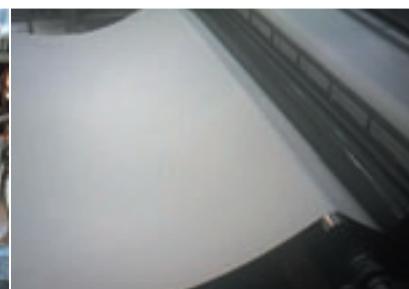
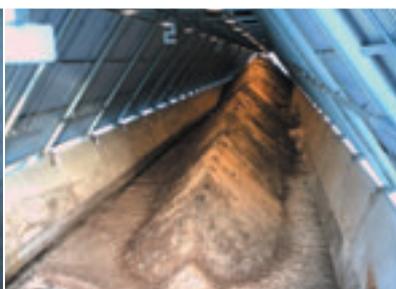
The system manager is also enthusiastic about the camera's flexibility: "I can connect the camera to any point in the network and make the image it records available to any other point with a normal PC or notebook. In the control room, the camera images can be easily switched to another monitor. Servicing and maintenance

are also hardly needed. Besides, I can even log on at home to alter the configuration of a camera or change other settings."

Although a total of three services at Zellstoff Stendal GmbH are now routed via a data line, there have been no adverse effects on system performance. Measurements have shown that the network load of the communications network is exceptionally low even when video images are being transmitted, something which can surely be attributed to the amply dimensioned 100 MB (copper) or 1 GB (fiberglass) lines as well as to the fact, that despite its high performance, MOBOTIX technology requires only an extremely low data rate.

MOBOTIX, Of Course

It is no wonder that system manager Kay Heppner is very satisfied with this camera solution. It also looks as though Siemens would like to continue working with this system. An Italian company is currently in the process of building a new paper factory directly in the vicinity of Zellstoff Stendal GmbH, and its communications network is being designed by the Siemens branch in Magdeburg. As far as Axel Borchers is concerned, MOBOTIX cameras will be used for monitoring production processes in this new project as well.





MOBOTIX Technology – Cost Savings in Every Aspect

High Resolution For Sharp Images

All MOBOTIX cameras are high-resolution cameras with integrated image storage and 960 lines (1280x960 pixels) resolution. The **stored image** thus contains 12 time more detail for creating zoomed sections of the image than regular cameras with 240 or 288 lines (CIF, 2CIF). This is why one single MOBOTIX camera with a 90° wide-angle lens is sufficient to monitor an entire room and yet provides more detailed images than traditional technology. The MOBOTIX Day/Night cameras feature zero maintenance with one color and one B/W image sensor.

Intelligent Storage Technology Uses Fewer DVRs

The new, decentralized storage technology pioneered by MOBOTIX reduces the number of recorders that store the smooth high-resolution video by up to 90%. 40 cameras store smooth video streams including audio on a single PC, each managing its own ring buffer and database. Intelligent search features provide swift access to the stored events. There is no software required for storing and managing video, eliminating license fees and the need for expensive software. Event-controlled recording and automatic increase of frame rates upon detecting movements drastically reduce the storage requirements.

Low Power Consumption Means Enormous Savings

Since MOBOTIX cameras are anti-fogging, do not require heating and only use 3 Watts each, power can be injected into the network cabling using standard PoE products, year round. This drastically reduces the amount of cables and the power requirements for backup power.

Integrated Telephone Features

All MOBOTIX IT and Secure models feature bidirectional audio support. The built-in microphone and loudspeaker are used for live audio transmissions and storage purposes. Voice messages with PIN confirmation and call forwarding via IP or ISDN telephony have been integrated as well. Using the switch outputs, you can switch lights or open doors from the phone or from the computer.

Robust and Well-Protected

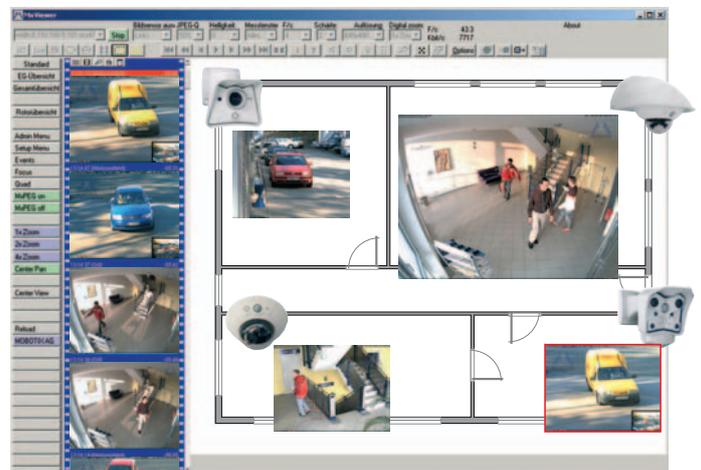
The fiberglass-reinforced housing is shockproof and the SecureFlex mount protects the network cabling as it completely conceals the cables (M12/D12 models). Weatherproof (IP65) from -30° to +60°C (-22° to +140°F).

High Return on Investment

Since the number of cameras and storage capacity are freely scalable and any kind of data connection can be used (ISDN, DSL, Ethernet, Wireless, GSM, copper, optical), MOBOTIX means high ROI, even years after installing.

State-Of-The-Art Technology

Developed and manufactured in Kaiserslautern, Germany, MOBOTIX produces image-storing weatherproof high-resolution cameras, including lens and wall/ceiling mount for as little as 598 EUR excl. VAT. To date, more than 100,000 cameras have been sold worldwide.



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